Scientific American.

THE ADVOCATE OF INDUSTRY, AND JOURNAL OF SCIENTIFIC, MECHANICAL AND OTHER IMPROVEMENTS.

VOLUME 5.] NEW YORK SEPTEMBER 22, 1849. [NUMBER 1.

THE
Scientific American,
THE
BEST MECHANICAL PAPER IN THE WORLD.
CIRCULATION 12,000.
PUBLISHED WEEKLY
At 128 Fulton Street, New York, (Sun Building,) and 13 Court Street, Boston, Mass.
BY MUNN & COMPANY.
The Principal Office being at New York.
Barlow & Payne, Agents, 89 Chancery Lane, London.

TERMS--$2 a year--$1 in advance, and the remainder in 6 months.

Rail Road News

New Jersey Railroads.

We have received the letters in pamphlet form, which appeared in the Burlington Gazette, N. J. under the signature of "A, citizen of Burlington," exposing the Railroad monopoly of that state. We read the majority of these letters before, and became convinced of the necessity of the reforms he advocated, "the abolition of the monopoly." If there is any thing more pointed than another, to prove the mighty influence of an honest public press, and the power of one able man with truth on his side, it is these letters. They have already destroyed the monopoly. The public have been enlightened—a convention of respectable citizens of New Jersey, have met and deliberated on the evils of the Railroad system of that state, which used to levy on passengers from other states, a poll tax for travelling by Railroad through it. The fare between this city and Philadelphia, has been reduced $1 already, and the evils of management, so effectually exposed by Mr. Carey the "citizen," will be reformed, and the whole household of abuses will no doubt, be soon swept clean and garnished:

Foreign Railroad Iron.

English Railroad iron which has been bought for some of the Pensylvania roads has been found to be very poor stuff—dearer than ours at $50 per ton, although purchased for $40. It is not the lowest priced article, that is the cheapest. Some people purchase iron, as if its value was in its name—that iron is iron, no one doubts, but an egg is an egg, be it fresh or rotten, and many of our companies, may find out that their cheap railroad iron, like eggs, has the qualities with the price of their *far-fetched profits*.

Great Tunnel.

Proposals are solicited for the construction of the great tunnel through the Blue Ridge, by which the Louisiana Railroad will be prolonged into the great valley of Virginia, near Staunton. The tunnel will be 4260 feet long, 16 feet wide and 20 feet high, with a ditch on each side; it will slope eastwardly, at the rate of 66 feet to the mile, and pass 700 feet below the top of the mountain.

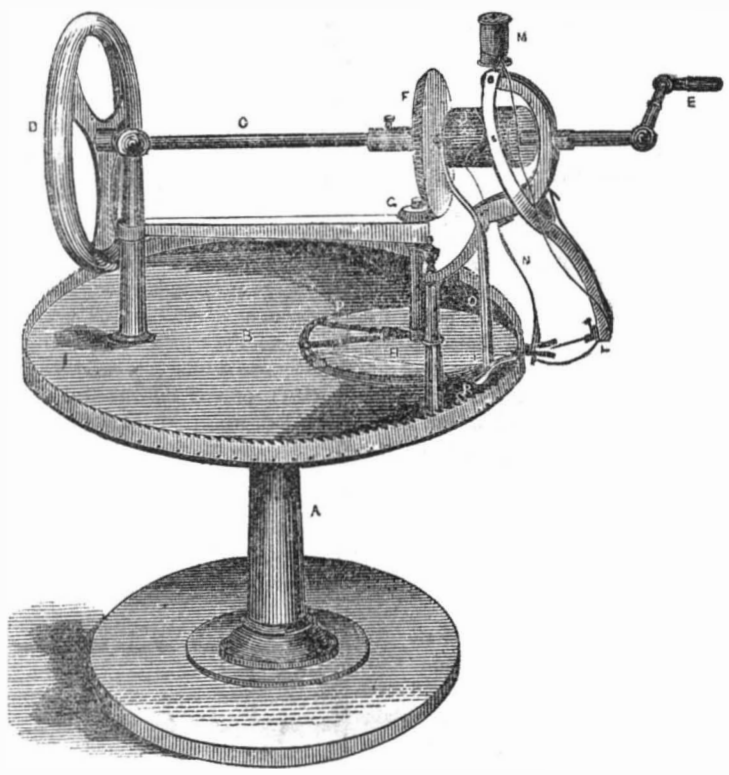
New York and Hudson Railroad.

The prospects of this road are brightening, and there is every appearance of its pleasingly disappointing many who were doubtful of its success. The stock has improved 4 per cent. In one week, a locomotive will be thundering over it to Peekskill.

The Michigan Central Railroad has engineers between New-Buffalo and Michigan city, surveying a route for the extension of that road—an arrangement having been completed by which the Michigan Central Railroad Company have contracted to extend and construct that road to Michigan city, by the 1st of November, 1850.

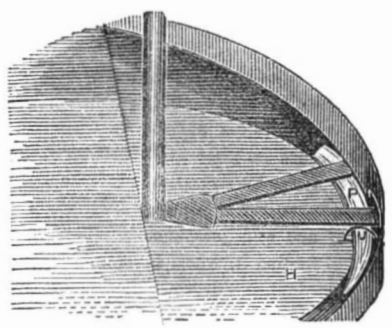
LEROW & BLODGETT'S ROTARY SEWING MACHINE.

Figure 1.



Every sewing machine that has yet been bought before the public, both at home and abroad, has been described in our columns; and two of those machines—Johnson & Morey's, American one, and Mangin's French one, were illustrated in our last volume. We commence this volume with the illustration of the most perfect of these machines—one which has unquestionable merit, because *every stitch* in it is self-bound, and the seam will not rip out, if one stitch is missed or broken, which is the great evil of the loop stitch sewing machines. The patent for this machine will soon be issued, and a number of rights have already been sold. It is a simple machine, yet its action will not be easily understood. The reader will therefore have to be attentive and studious while perusing this description. Figure 1, is a perspective view figure 2, is a section of the shuttle traversing its circular path, and figure 3, is a view of the interior of the shuttle.

FIG. 2.



A, is a small pillar fixed on a base which may be screwed to any table, B, is a top plate fixed on the pillar and turned up at the rim like a frying pan. Around this rim is a circular or hoop ratchet, which moves round on a small recess in the rim. In this ratchet hoop, there are a series of pins or needles, indicated by the round dots. On these, the cloth is secured to be sewed. C, is an axle to drive all the machinery. It is secured on a post at one end at the small fly wheel, D, and at the other end on a frame extending up from two small side posts at the right hand side one of these small posts, is not seen; F, is a bevel wheel on the shaft C, and G, is a bevel pinion on a small vertical axis in the middle of the circular shuttle path. This vertical axis has two spring arms, H, extending from it and pressing upon the shuttle, P; J, is a cam cylinder. It is formed with an eccentric waving groove, which gives the quick reciprocating motion to the needle, L, by the needle being secured by a screw in the lower end of a bent arm, the upper end of which is secured on an axis pin below the spool, M, and it is of a fork shape around the cam cylinder, J, having two knobs or pins projecting into the eccentric groove of the said cylinder; therefore when the cylinder is revolved by the handle, E, the needle is forced in and out, by its arm above, in the dark groove represented in the cylinder, J. While the needle sews, the cloth must be moved in unison. This is done by a ratchet rod, O, secured on an axis pin on the small arm of the frame spoken of, the upper end of which, leans against the edge of the cylinder, J, on which are projections that vibrate the ratchet rod regularly, and operate ratchet, O, which takes into the teeth on the rim, moving it and the cloth regularly around. It now remains to be explained how the stitch is formed and the cloth sewed.

FIG. 3.

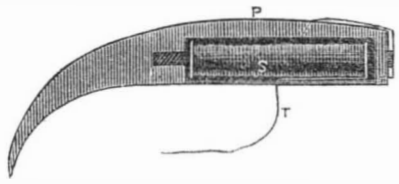


Fig. 3 shows the thread, T, upon a spool, S, inside of the shuttle, P. This thread passes out of the side of the shuttle, trailing close to the rim inside. There is also a thread from the spool, M, which comes down and passes through an eye near the point of the needle. The needle passes through the cloth to the inside, below the track of the shuttle by a small orifice in the rim. When it has passed in the full length of the stroke, the eccentric groove in J is so made as to give, at that moment, a short stroke to the needle, the thread of which is then held back by spring lips, on the lower end of N, through which the needle must pass outside, and the thread is doubled up above the shuttle's track; at that moment the shuttle comes along, (its bevel pinion being made to revolve the shuttle in correct time) and passes under the needle thread loop *u*, as faithfully represented in fig. 2,, forming a double chain loop with the two threads crossing one another in the hole formed by the needle. There is therefore a fair stitch formed on both sides of the cloth, in appearance, like a saddlers stitch, and which makes a stronger seam than can be formed by hand work. While the shuttle is passing through the loop, there is a cam inside of the fim, which lifts one of the spring arms, H, off the shuttle (one after the other) to allow the thread to pass under it. All the details of this machine are very perfect. We believe that with the foregoing description, any person, will be able to understand its action. The price of a single machine is $100, with the right to use it. Orders may be left for the owners at this office.

Useful Receipts.

Marine Glue.

Dissolve 4 parts of India rubber in 34 parts of coal tar naptha—aiding the solution with heat and agitation. The solution is then thick as cream, and it should be added to 64 parts of powdered shellac, which must be heated in the mixture till all is dissolved. While the mixture is hot, it is poured on plates of metal in sheets like leather. It can be kept in that state, and when it is required to be used it is put into a pot and heated till it is soft, and then applied with a brush to the surfaces to be joined. Two pieces of wood joined with this cement can scarcely be sundered—it is about as easy to break the wood as the joint.

To Destroy the Smell of Musk.

Some years ago, the Emulsion of Bitter Almonds was found to possess the property of annihilating the smell of Musk, and most of the cyanic preparations evinced the same power. According to M. Mertot, a Pharmacien of Bayeux, in Normandy, Ergot of Rye will produce the same effect. "I had," says he "to prepare a number of pills, containing both Musk and Ergot,—hardly were the two substances mixed, than the smell completely went off, so much so, that the patient, who was not aware of the nature of the pills only noticed the Musk by the effects of flatulency.

To make Panada or Bread Jelly.

Cut a wheaten roll or loaf into slices, toast them on both sides, and boil in a quart of water until the whole forms a jelly, adding more water if required; then strain, and flavor with one pound of white sugar, four ounces of red wine, and one ounce of cinnamon. Very nutritious. It may also be made with broth from which the fat has been skimmed instead of water.

Biscuit Jelly.

Take of white biscuit, crushed beneath, the rolling pin, four ounces; cold water, two quarts soak for some hours, boil to one half, evaporate to one pint, and flavor as above. Given in weakness of the stomach, dysentery, and diarrhœa.

Cement for Mending Steam Boilers.

Mix two parts of finely powdered litharge with one part of very fine sand, and one part of quick lime, which has been allowed to slack spontaneously by exposure to the air. This mixture may be kept for any length of time without injury. In using it a portion is mixed into a paste with linseed oil, or still better, boiled linseed oil. In this state it must be quickly applied, as it soon becomes hard.

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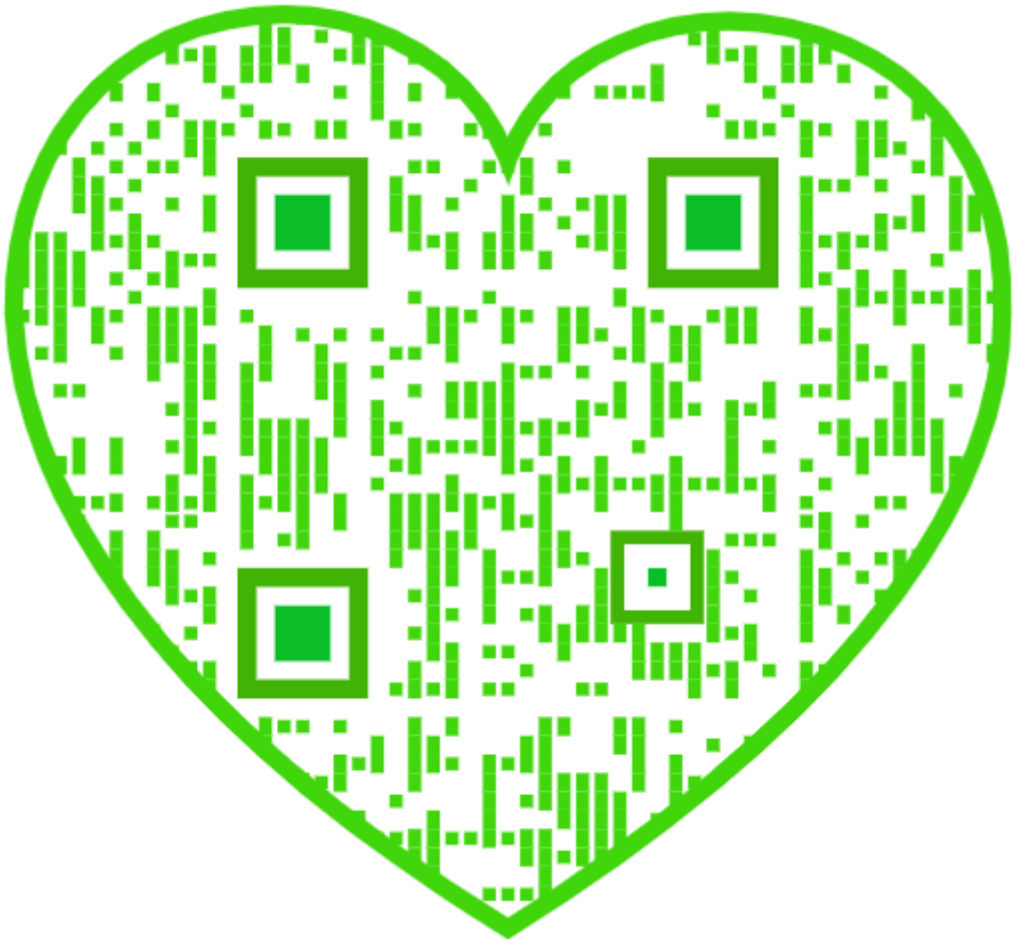

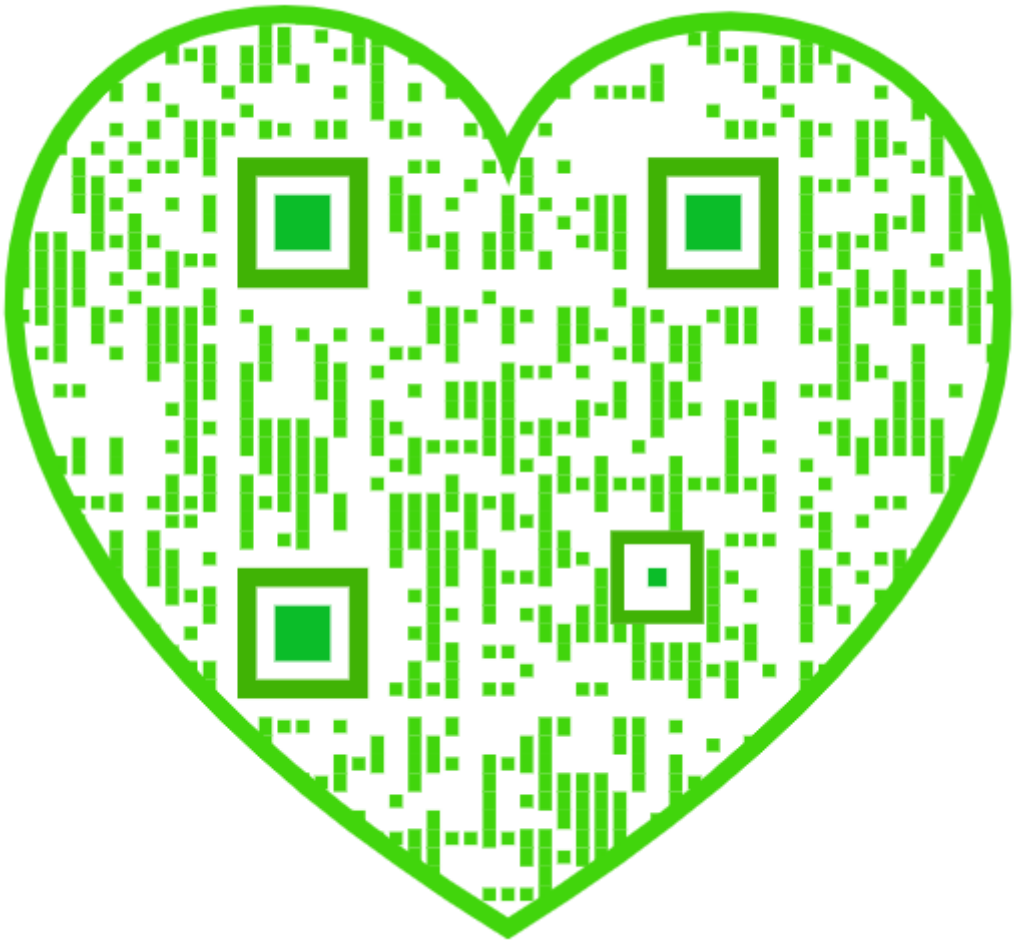

Miscellaneous.

New York State Fair.

The Annual Agricultural Fair, closed the exhibition at Syracuse last week. It was the largest Fair that ever was held. The cattle were excellent, especially the horses and sheep. The agricultural implements that were exhibited, showed signs of improvement. There were no less than three or four hundred agricultural implements. Reaction Water Wheels, Cultivators, Ploughs, Horse Powers, Pumps, Straw Cutters, Threshers, &c., all of which gave evidence of increasing ingenuity and care in the construction of such valuable auxiliaries to the farmer. In this department, the influence of the Scientific American, was distinctly observable. No good farmers can be content with poor tools. The best articles, although highest in price at first, are always cheapest in the end.

Proff. Johnston delivered the address. He is well known for his writings on Agriculture, and came over from Britain by invitation to deliver it. Our yeomen make brothers of all the human family who follow the same occupation. The theme of the address, was the state of agriculture in Europe, especially in Scotland, the land of the Proffessor. The matter was excellent, although the delivery was not first rate, but some how or other, it was attractive. These Fairs do much good, and none that has preceded the present one, has done so much to whet the minds of our farmers, with the important object of "Excelsior."

Interesting Railroad Trial.

A trial is just conscluded in Doylestown, Bucks county Pa., which involved the question whether the Philadelphia and Trenton Railroad Company, through its agents, had power to enforce the rule they have adopted of making a difference in the prices of fare between way and through passengers. Mr. Bodine, who took his seat at Jersey City for Trenton, but put his baggage in the car for Philadelphia, was ejected at Bristol, for not paying the continuation fare ($1.50) instead of 75 cents, which is the amount charged for way passengers from Trenton to Philadelphia. The Court in charging the jury held that the company had authority to make the regulation alluded to; that the regulation was in itself a reasonable one, to which the public are bound to conform. If they could not fix their own standard of fare, every man who took his seat in the cars might regulate his fare to suit himself, and involve the company in an endless sea of troubles. The Court also administered a rebuke on the effort to throw the cry of "monopoly" in the jury box. It was their duty to try the case upon the law and evidence, without any regard to the prejudices and passions of the community. The jury, after deliberating about eight hours, came into Court with a verdict of "not guilty." This decision will put the question to rest.

Great Balloon Ascension.—American Aeronauts.

An English paper says that Mr. Charles Green, being determined to show the public that the late accident to the Nassau balloon was one that had occasioned no injury, ascended from the fire-work grounds at Vauxhall Gardens, in sight of some thousands of spectators, whom curiosity, more intense since the reported mishap, had brought together to witness the result. The balloon had two cars attached to it—one below the other. In the upper one were Mr. Risley, the celebrated American Athletic ; Hernandez, the well known equestran ; Mr. Rush, who has so often accompanied Mr. Green in his trips ; Mr. Ferrar, who was one of the gentleman who alighted last week on the house on the London road; Miss Orme, Miss Forresh, and Mr. C. Green himself, In the lower car were Mr. Henry Green Mr. R. David and two other gentlemen. The balloon was completely inflated, and notwithstanding the great weight of the passengers and apparatus, it rose most rapidly and almost immediately obtained an immense elevation.

New Steamship Ohio.

This new steamship made her trial trip on last Satturday. A large party was on board, and it seems that the run down the Bay was anything but agreeable, to a great number who were on board, the one calling the other Vandals, as a great number of spurious cards of invitation were printed, and more than pouble the number of the real invited, were on board to have a share in the puddings and pastry.—The Ohio draws 19 feet of water, is 275 feet in deck length, 45 feet beam and 33 feet deep.—She was built by Messrs Bishop & Simonson.—She has two engines built by Secor & Co the cylinder of each being 7 feet 6 inches dia. and 8 feet stroke, very powerful indeed, she, like the Cunard liners is built to be fitted in a short time, for a vessel of war, a bargain with our government having beeen made to that effect. The Ohio did very well. Why not give her a trial across the Atlantic.

Growth of our Cities.

The growth of American cities is unparalleled in the history of the world. Already half a million are embraced within the limits and suburbs of New York; and nearly four hundred thousand in that of Philadelphia.—New Orleans contains about one hundred and fifty, Boston, one hundred and thirty, and Baltimore, one hundred and five thousand inhabitants. The second child born in Cincinnati, it is said, is still living, and has not reached the middle age of life. The city has a population of more than one hundred thousand. The population of St. Louis was one thousand six hundred in 1810; sixteen thousand in 1840 ; forty thousand in 1845; and is now probably not less than sixty thousand. Buffalo contained two thousand four hundred and twelve in 1825; in 1846, twenty-nine thousand seven hundred and seventy-three; and now contains about forty-five thousand. In 1828, the population of Lowell was three thousand five hundred and thirty-two; it is now more than thirty thousand. Chicago, a place scarcely known on the latest maps, has already reached a population of eighteen thousand; and Milwaukie, of still more recent origin, is rivaling it in its growth and population.

Prize for Artists.

The Pennsylvania Academy of the Fine Arts offer prizes amounting to $1500 to any artist whose work, approved by a committee, shall consist of a picture on some Historical, Scriptural, or Dramatic subject in size not less than 50 inches by 40; to be delivered at the Academy on or before April 10, 1850. The prizes are to be distributed as follows : One prize of $740, one of $500, and one of $250. The directors further offer one prize of $300 and one of $200 for pictures which shall consist of landscapes or Marine Views, and not less in size than 54 by 40 inches. On payment of the money the pictureshall become the property of the Academy. If the artists desire their successful productions to remain for sale, they shall be taken care of, without any charge or expense to the artist, and every effort will be made to dispose of them to the best advantage.

Curious Flower Amalgamation.

The Van Buren, Ark., Intelligencer says that Mr. E. B. Bishop of tha place has a flower which partakes of the cypress and morning glory.

A year ago, the seed of the morning glory and cypress were planted together so as to entwine each other. This year three vines came up and produced, each, a different leaf and flower ; the morning glory has a natural shaped leaf, with a deep orange colored flower, small and round shaped ; the cypress produced leaves and flowers perfectly natural ; and the amalgamation produces leaves as large as the morning glory, with half their sixe, divided out in small spangles like the cypress, producing a flower of beautiful vermillion red, and half way between the other two in size.

A correspondent writes to us that the best way to plant lima beans, is in hills of 4 or 5 beans in clayey loam soil.

Sixty miles of the Rutland and Burlington Railroad Vt., is laid, and the cars are running 28 miles on it, from Bellows Falls to Ludlow

Sir John Franklin.

An English paper states that the Rev. Dr. Scoresby delivered a lecture last month in England, "On the Hopes and Fears concerning the absent Arctic Expeditions." The lecturer who has explored those regions himself, and whose father made several important discovin arctic navigation, first entered into an historical account of the different discoveries made in those parts, and then entered into the more immediate subject of the lecture. He (Dr. S.) is of opinion that the hopes of Sir John Franklin and his company ought yet to outweigh the fears for many reasons : first, because the first summer they were out has been proved to have been a bad one for making researches in those seas, which would of coarse delay them ; secondly, that Sir J. Franklin knowing that this would be the last expedition that in all probability would be sent out, would naturally endeavor to make the most of it ; and thirdly, that although he only carried out provisions for three years, yet, when seeing that he was likely to be longer detained, he would begin to lessen the quantity of victuals served out to the men, as one-half the full quantity allowed is sufficient to keep a man in health, and therefore he was not likely to suffer on that account saying nothing of the occasionl supply of seals, birds &c., which abound in those regions. The lecturer also showed from a map the different places where he supposed they could quarter safely for the winter. He thought, however, after all, that, if we received no intelligenee from them before the end of the Autum, the chances in their favor would be greatly lessened.

John Banvard and his Panorama.

John Banvard has given a free admission to his panorama to all the chraity children and ragged schools in the parish of St. James, in which his panorama is exhibited, they are received in detachments, and the wonder and delight manifested by these poor children, in this to them rare and peculiar indulgence are not easy to be conceived. We may add that the great success of Banvard has had the usual effect. Numerous imitations are now exhibing in the country, and one of these has the anning to state in its handbills and advertisements —"This is the very *subject* exhibited before her Majesty at Windsor."—London Paper.

General Burgoyne's Watch.

Mr. Baldwin, a gentleman of Newark N. J. while travelling through the state of New York, came across a venerable Dutchman, who had in his possession a watch which formerly belonged to the British General, Burgyne, of Revolutionary memory. Mr. Baldwin succeeded in purchasing the watch. Upon it was engraved the name of the former owner. It is very large being from 3 to 31-2 inces in diameter, and about three-fourths of an inch thick, and would probably weigh about seven or eight ounces.

Singular Bad and Good Luck.

On the 8th inst., one of the largest stock brokers in Baltimore, after drawing money at two of the banks, amounting to $4,700, started in a hack to his deposit bank; but before he proceeded far discovered that his purse was gone! He immediately stoped the hack and set out on a pedestrian seark, but could not find it, and was just about to abandon the hope of finding it, when the driver discovered it lying by the side of the curbstone. The feelings of the loser, *just then*, we will not attempt to describe.

To Treat Dog Bites.

When any one is bitten by a *mad dog*, unquestionably mad, take a carving fork and break off one prong, and eat the other in the hottest part of a common fire; apply this thoroughly to the whole of the bite, so as to destroy the surrounding parts. If a surgeon be within half an hour journey, tie a string tightly immediately above the part, and use all possible dispatch to secure his aid.

Southern Machine Shop.

Messrs. Poe & Co., of Agusta Geo., have commenced the erection of a machine shop, for the construction of cotton machinery such as power looms, &

To Inventors.

Those who wish to have engravings of inventions inserted in the Scientific American during the three weeks of the great Fair of the American Institute, in this city, next month, are requested to forward their models or drawings to this office as soon as possible. Models may be sent by express ; drawings by mail.—During the continuance of the Fair we shall issue extra editions of our paper for circulation among the many thousand visitors who annually attend. Those who can should embrace this opportunity, for it is a rare one, of having them illustrated and noticed, there is no doubt that a great many rights may in this way be disposed of. The Scientific American is about the only paper upon which people depend for information about mechanical inventions.

Read This.

We send 15,000 copies of this week's number of the Scientific American, to inventors and mechanics throughout the United States, that they may see the work and thereby become induced to subscribe.

Inventors and mechanics will you not liberally support the journal that advocates your interests and enlightens your understanding ? —Show your approbation of the cause we advocate by subscribing, to what is termed by all "the cheapest and best mechanical paper in the world." This number commences a new volume, and therefore is the most favorable time for subscribing.—Peruse the prospectus on the last page and make "particular note" of the inducements there offered to clubs.

Sending Receipts.

It is impossible for us to enclose receipts to our subscribers in the paper without violating the Post Office laws and thereby rendering our ourselves liable to be fined. But all persons who receive the paper may take it for granted that their money has come to hand, or that the time for which they have formerly paid has not expired, for in no case do we continue sending unless the pay has been received in *advance*.

Steam Frigate.

A large steam frigate, to be called the Susquehanna, is being built at Philadelphia. She will be 80 feet longer than the great ship of the line, the Pennsylvania, but her breadth of beam will be much less, and her tonage but 2500.—Her machinery will cost $300,000—the four boilers alone $30,000—and the whole vessel, when completed, about $600,000. Her crew will consist of about 300 men. It is expected she will be launched in about six months.

Strange Mechanical Fancy.

There is confined in the Commercial Hospital, in Cincinnati, a crasy cabinet-maker, who is permitted to follow his business, there have been placed in his sleeping apartment all necessary tools pertaining to his trade. The beautiful work he manufactures excites the admiration of all, and not one article is allowed to leave his little shop without having a secret apartment, which he ingeniously contrives.

Singular Accident.

Mr. Chas, Green was knocked down by a plank falling on his head, at St. Louis, on the 28th ult., and laid insensible for about an hour. On coming to himself, he was but little injured, and his senses were perfect in every respect except that he had lost all memory of his past life and all past events.

[Does this point to a chamber of the human mind, on the walls of which are inscribed the images and events that we have seen and heard, which, like a panorama, can be made to pass at will before us?

The Britania Bridge.

The Britania Tubular Bridge over the Menei Straits in Wales, England, has been arrested in its progress for some time, by the bursting of one of the hydraulic rams, during the raising of the first tube. The tube was raised 21 feet. The cause of the bursting was a defect in the iron of the ram.

On the 12th inst., a fire broke out in the Auburn State Prison N. Y., which destroyed considerable property both in the tool shop, and cooper's shop.

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For the Scientific American.

Ice Made by Mechanical Power.

Numerous brief, but, unauthorised notices of a machine, devised in this city and constructed at Cincinnati, for manufacturing ice by mechanical agency, have been already given to the public. As is too common, under the impulsion which newspaper reporters feel, to make captivating paragraphs about a thing new or rare, or the delight which an interested party experiences at, first observing a prospect of realizing great expectations, these notices have been highly exaggerative. I had the pleasure some little time ago, of enquiring into the principles on which the utility of this machine is based, of examining its construction, receiving an explanation of its mode of operation, and of seeing some of its effects. The study of mechanics being a favorite occupation of my leisure hours, while that of chemistry is intimately connected with my business pursuits, I may, not unreasonably lay some claim to a knowledge of these sciences.

This invention, then, I find is not purely mechanical, but is based upon both mechanics and chemistry; and if I have not over estimated my capacity to judge of its merits, I may state that it will be found to stand the test of practical utility, answer the rational purposes for which it was intended, and supply one of the most important wants of mankind. At any rate in the account of it I shall give, I shall state nothing which my own observation does not represent as fact, or from which a rational deduction does not warrant the conclusion I shall draw.

The invention is certainly remarkable for that happy inspiration which has brought a few simple natural laws to a highly utilitarian purpose. If it were not for the evidences of ingenuity displayed in the combination and proportion of its various parts conjoined with the negative fact that nothing of the kind appears to have been noticed in the records of science, I could not persuade myself that so obvious a means of clearing a wide field for profitable operation had not been, long since discovered. It comprises a beautiful and comprehensive system of equivalents by which very great mechanical and chemical effects may be obtained with comparatively little, or the least possible consumption of mechanical power, or waste of chemical action. Essentially it consists of two simple agents—a force pump in which air is divested of latent heat by mechanical compression, and an engine in which the same air is made to operate expansively, and, in the process, absorb from water to be frozen, the heat due to its increase of volume. But there are several auxiliary agents for giving the simple contrivance its highest effective utility. Thus, by the obvious arrangement of attaching the pump and engine to the opposite end of a common beam, the mechanical power consumed in condensing air in the pump is to a considerable extent recovered in its expansion in the engine. At the same time the heat evolved by the compression of the air is extinguished by a jet of water thrown into the body of the force pump by means of a smaller pump; while the heat necessary to impart to the expanding air the elasticity and mechanical force due to its quantity and volume is furnished through a similar pump, which takes from a cistern a portion of liquid, and, after injecting it among the expanding air in the engine, returns it to the same cistern. This cistern thus operates as a reservoir of cold, and as the sufficient means of abstracting heat from water, which is to be converted into ice, and which is immersed in it, suitable vessels, for the purpose. Pursuing this system of compensatory equivalents the inventor proposes, in the practical application of his principle, to use the same air over and over again an indefinite number of times. He can thus attain the two objects of employing air, which previous condensation has deprived of heat and subsequent expansion has left at a lower temperature than the atmospheric, and which is divested of the corrosive action of its oxygen:

I do not deem it proper to go into further explanatory details of the means by which the valuable results of the invention are to be obtained, because, I understand much money has been expended by a few enterprising merchants of this city, in enabling the inventor to make the experiments necessary to test its utility, and it is right that they should be allowed to choose their own time and mode of giving what publicity to them they please. I will, however add, that the machine already made is an experimental one, is perhaps unavoidably, very imperfect in plan and execution, and certainly admits of great simplification as well as other improvements.

The present usefulness of this noble invention has been impaired by absurd stories being allowed to get into the newspapers about its capacity, to produce ice in vast loads at a time, in large blocks in a few seconds, and at a cost of manufacture which enables the proprietors to furnish it in any part of the world at a dollar a ton. It would be evidence of a vast addition to the comfort of mankind if it could be shown that the principle admits of its being applied to the production of ice, within the tropics, at a less price than it can be imported from nature's great laboratories. For this degree of capability the inventor contends; nor is it incompatible with a fair examination of the principle or the actual results of experiment. Gay Lussac has long ago shown, that the quantity of heat evolved by the compression of atmospheric air is prodigious, and as it follows that the heat absorbed in expanding from this compressed to its previous condition must be equal, it is only necessary to prevent a waste of this action, to be able to obtain the effects of a prodigious quantity of cold. The materi als employed are every where very cheap ones of air and water, and if the refrigerative effects of the principle is capable of producing upon them can be obtained with a small consumption of power, and that power steam, or one equally cheap, it must be apparent upon the slightest reflection that ice can be manufactured at a comparatively small cost.

Supposing the above position to be correct the invention admits of an application to an infinite number of the purposes of life, of even more value than the manufacture of ice within the tropics. Indeed, as there is, at this day, no want of humanity greater than a means of producing cheaply an abundance of cold, so, if this desisderatum is attained by this invention, science has never made to art, a present of more beauty, value, or general utility. Experiment certainly shows that the rude and imperfect machine already constructed is capable of lowering a large quantity of matter from a temperature of 90 deg. F to 5 deg. or even 6 deg. below zero, and of maintaining it at the latter temperature, an indefinite length of time with little cost of power, and it is therefore obvious that it could be applied to the preservation of all animal, and those articles of vegetable food that are destroyed by atmospheric heat. But the most important and grand object which directed the inventor to the invention, is its applicability to the prevention of disease. It seems to be conceded by medical men, that there is an intimate relation, perhaps as close as cause and effect, between high natural temperature, and yellow and other malarial fevers. If, then, we can exert such a control over temperature as to be able to reduce it, within the spaces in which men pass their time as in a dwelling, hotel, hospital or fortress, and more particularly in their sleeping apartments, to a degree below that at which these diseases are generated, we shall inevitably lessen, or perhaps prevent their liability to them.

The originator of the proposed method of accomplishing these great objects is an old friend (Dr. John Gorrie of Florida) from whose moral and intellectual qualities we have the highest confidence, any statements to which he may give publicity, regarding the value or general merits of his invention, will stand the test of experiment. Independant of the opinion I have expressed, several persons, eminent from their position in science, have become interested in a scheme, which in its possible, or even probable applications, may modify the existing relations of the inter-tropical regions to the rest of our globe, and after examining the principle and its operation, have expressed the belief, that our friend has succeeded in a very important undertaking. As evidence of faith in its practicability and value, and in confirmation of my views, it may be mentioned, that several persons well known in this community for their shrewdness and business talents, have not hesitated, as already mentioned to furnish the capital necessary, for conducting a very expensive course of experiments. J. C. C

New Orleans, September, 1849.

Parisian Cleanliness.

In Paris every species of refuse is husbanded in the most careful manner. No refuse is allowed to be thrown into the streets after a very early hour in the morning, nor until after 10 o'clock at night. The refuse consists of what may be called house dirt, &c., is laid in heaps in front of houses near the gutters. A very numerous class of people, chiffoniers, consisting of as many women as men, with deep baskets on their backs and a small stick with a hook at the end, carefully turn over every one of these heaps selecting every particle of leather, bones iron, paper, and glass, which are thrown at once into their baskets and being carried to their places of general deposite, are there again examined, and sorted, and appropriated to any specific application for which they may be suited. These persons appear like a most degraded class; they inhabit particular quarters of the city, and the interior of their habitations is such as might be expected from their occupation. The profession descends from father to son, and from mother to daughter. They are a most industrious race of people, and many may be seen at midnight with their lanterns, taking advantage of the first pickings, and anticipating the labors of the coming morning and with the earliest dawn they are to be found at their tasks. No article of food escapes them, and they call the street their mother because she often thus literally gives them bread. Though their occupation is necessarily dirty, they are almost always comfortably clad and are never ragged. They never beg, and disdain to be considered objects of charity.—They are licensed by the city authorities, for which some trifling sum is paid, and for which they must be recommended for sobriety, and good conduct. They have their particular districts assigned them, and are very careful to prevent all foreign intrusion.

The chiffoniers having done their work, next come to the sweepers and collectors of dirt.—Every inhabitant of Paris is required, under a penalty, to have the side walks in front of his place of busines or residence, carefully swept every morning. The sweepers of the streets of Paris are almost uniformly women, who with long twigs or birch brooms, sweep the streets thoroughly, and all the accumulations are taken in carts to the great place of deposite.

The women assist as much in loading the carts as the men. These women appear to work extremely hard, carrying always a long broom in their hands and a shovel fastened to their backs to be used as occasion may require. The gutters in Paris are washed out every morning, by fountains which are placed in every street, and what the sweepers are not able to collect for the carts, they are careful to sweep into the drains leading into the common sewers. I have looked at the people and the chiffoniers with great interest; and, filthy and disgusting as their occupation necessarily is, I have always felt in my heart a sincere respect for persons poor, as they are who are ashamed to beg, and who, by the serverest and most useful labor, are proud to obtain for themselves and their families, though a very humble yet honest living. All this refuse is transported to places appropriated for its deposit, where it remains until it is decomposed, and is then sold to the farmers for manure.

[The above is taken from Colman's Tour of France, and without making much ado about it, the same sight for a foreigner to write about, can be seen in New York City, with the exception of the women loading carts, and the entailment of the rag picking business. Some things can be seen at home to write about, just as wonderful as those abroad, but it is no uncommon thing for people to be well versed with foreign notions who are totally ignorant of things at home.

Singular Fact Connected with Cholera.

The following from the St. Louis Union, Mo., is something worth of investigation, and is at least, a subject for wonder.

The town of Hillsboro, Mo., lies about forty-five miles south-west of St. Louis. That town and region of country were entirely exempt from cholera until two or three days subsequent to the 2d of Jnly, when it broke out with great virulence, carrying off many of the inhabitants of the place.

It will be remembered that on Saturday night the 2d of July, we had the streets of this city illuminated with innumerable bonfires, for the purpose of freeing the city of cholera. For several successive days prior to this, the wind had blown from the south-east, but on the following evening, it veered round and blew from the north-east. We learn from reliable authority, that directly after the wind shifted, the fumes from the tar and stone-coal used in the fires here, were distinctly smelt by the inhabitants of Hillsboro, and in a day or two after, the cholera made its appearance in the town; and now, since the disease has left the country, and people have commenced once more to move about and inquire into past events, it has been discovered that the cholera swept like a tornado in a direct line from the city to Hillsboro, and onward a distance of thirty-five miles beyond, confining its ravages to a tract of country not more than three or four miles in width, and extending in a straight line about sixty-five miles to the south west. The line includes the coal mines near our city, where the disease was awfully fatal, and from that point onward to its termination, it decreased in its ravages, and after passing Hillsboro, rapidly so. The cholera did not make its appearance on any of the public roads, through that region of country, except where they intersected this tract through which it passed, and at these junctions it was frequently very bad.

Discoveries in Africa.

A French exploring expedition has partially ascended the Grand Bassam river in Africa, and has discovered it to be a confluent of the Niger. Captain Boilet, the commander of the expedition, writes, that he has discovered two magnificent lakes, where palm oil is so abundant that the ship had not vessels enough to hold it. Now, according to the dealers themselves, palm-oil gives a profit of 80 per cent., whilst gold only yields 50 or 60. The adjoining villages are said to overflow with produce of all sorts. Captain Boilet has, however, visited unknown regions, and established relations in the midst of a country the very centre of the gold trade, the only commerce hitherto carried on at Grand Bassam. It being the dry season, the want of water prevented its entire exploration, but in the rainy season there are six feet of water, and the river may be ascended as far as the cataracts of of Abuesson, 50 leagues distant. At that place the traveller is within 60 leagues of Sego, and the course of the Niger is still continued. When the steamer Gettander proceeds to Grand Bassam, that vessel, which only draws two feet of water, will entirely solve the problem. Thus, a well-armed and well supplied vessel will penetrate to the interior of the country, traversing a district of which Captain Boilet has seen a part of himself, and which is the entrepot and passage for the caravans of the gold and the silk merchants, and where the gallant captain discovered, and inhabited for two days, a city more ancient and more important than Timbuctoo. "I might write a volume," concludes the letter, 'were I to attempt to relate the dangers and adventures of the expedition."

History of Propellers.

It is our intention to illustrate a history of the various plans that have been proposed and brought forward, to propel vessels, both paddles, and other contrivances. It will be the best and the *alone* history of propellers (an extensive name) in the world. Those who subscribe for this volume, will possess in the single history of propellers, a work which cannot be obtained any where, in a collected form. We have sources of information opened of a very extraordinary character.

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New Inventions.

New Rail Road Switch.

Mr. H. C. Jones, of Newark, N. J., has invented a valuable improvement on the R. Road Switch. It is a new application of a patent lock of his own, which promises to be valuable in another field. It consists of jaws which grasp two sides of a dart headed staple. It has two chambers, so arranged that sand and gravel cannot be forced into them, as has been done by malicious persons with the old locks, and the key-hole is provided with a close cover to prevent the access of moisture, &c. from the rains. It is intended to be readily applied to the switches in ordinary use, requiring a simple turn of the key to open it, and then lock itself by a spring, upon merely closing the switch levers,—thus saving the time required by the bolts and locks now generally used, and is calculated to be worked by the engineer, without the necessity of switch-tenders.

Improved Meat Chopper.

Mr. Andrew Paine, of Milton, Ulster County, N. Y., has made an improvement on Meat Choppers, which is very simple and good. He employs two knives to cut, on a rotary block, and he gives the knives a reciprocating and the block a rotary motion, by a wheel on the main axle, which can be driven by hand or by other power. The wheel which thus moves the knives and turns the block, is an eccentric cam wheel. It has cams on its two sides, which strike downwards alternately on the short ends of the levers to which the knives are secured, their fulcrum being an axis on which they vibrate—the knives cutting downwards. At the same time the cams are actuating the knives, the edge of the wheel moves a ratchet, which takes into a ratchet rim on the meat block, and thus *it* is moved round on an upright axis in unison with the knives. This machine is simple and can be easily and cheaply made. The inventor has taken measures to secure a patent.

Improved Grass Cutting Machine.

Mr. Homer Adkins of Round Prairie in McDonough Co., Illinois has invented a new and useful improvement in machines for cutting grass which has been tried and worked well, and for which he has taken measures to secure a patent; his cutters are formed on one blade like a long rip saw in front of the wagon wheel, and to it is a vibrating arm, on a rocking shaft, which receives motion, simply from a cog wheel formed on the side of the wagon wheel. The cutters therefore have a reciprocating motion while the wagon is drawn forward, and cut during the forward and back motion. The grass is held firm to the cutters by a set of stationary teeth or cutters, formed exactly like the active cutters, but which are placed below them, to grasp the grass and hold it up to the action of the cutters, making them to act nearly like scissors. We will present an engraving of this machine at some other time.

New Circle Bearing for the Axles of Carriages.

Mr. Peter Van Buren, of Coeymans, Albany Co., N. Y., has made a very valuable improvement on circles for wagons and carriages, for which he has taken measures to secure a patent. The circle works on a conical hub, with an opening in it, through which a wrought iron king bolt passes and is secured to one of the braces below; by this arrangement the king bolt does not wear out, for there is no action of the circle on it, and as the hub on which the circle plays, is conical, it (the circle) accommodates itself in a very excellent manner to the rising up and down of the wheels, on uneven roads. This improvement, by many who have seen it, and who are well qualified to judge of the matter, has been highly spoken of.

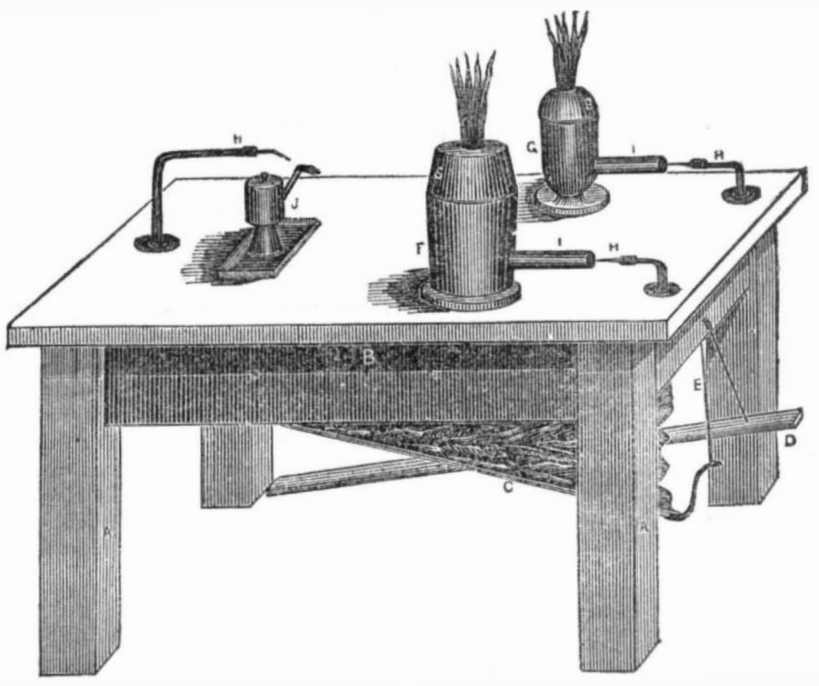
A rotary clothes--drying machine has been erected in the Park, behind the City Hall, where it spins around with the clothes on its arms, drying them in shadow or sunshine.

Improvement in Spark Arresters.

Messrs. Z. C. Ladd & Edward Ivers, of Boston, Mass., have made a most splendid improvement on spark arresters, for which they have taken the usual measures to secure a patent. It has the quality of preventing a single spark from escaping. It has two wire-gauze screens connected together, an inside one and an outside one. The inside one is of a pyramidical form, and the outer one an inverted cone, surrounded with the outside case, which is like those in common use. The smoke and sparks from the fire pass first up through a central interior pipe, at the top of which is an inverted conical cap, the vertex of which is directly above the centre of the pipe; but there is a space spreading circularly, and around which conducts the smoke, &c., to come down and to pass through the outside gauze screen, into the space or chamber between it and the inside screen, from which it ascends out of the arrester, by radiating channels at the top. The inverted conical cap at the top of the vertical smoke pipe, deflects the sparks and sheds them off towards the sides, where they fall down between the outside screen and casing into a receptacle for that purpose, which can be easily cleared at any moment. All the smoke, &c., is therefore directed upwards and sideways and then downwards, to pass through the screen before it can escape, and in doing this, the sparks are completely sifted from the more subtle smoke—something very much desired on our railroads, that still burn wood, as every traveller knows full well, sometimes at the expense, not of an eye opener, but an eye closer.

IMPROVEMENT IN THE PORTABLE BLAST FURNACE.

Figure 1.



This is a most valuable improvement in the useful arts, both for chemists, silversmiths, dentists and assayers, invented by Messrs. Barron & Brother No. 252 Broadway this City. The experiments of Messrs Barron, were founded upon the principle that a given quantity of fuel would produce a given quantity of heat, and that the blast-furnaces heretofore in use, were not economical in the use of fuel to produce that heat, because the cold air was forced in upon the fuel, in a greater quantity, than was actually required to support combustion—the superabundance producing a prodigal instead of an economical effect. Fig. 1, is a perspective view. Fig. 2, is a view of the bellows, and fig. 3 is an enlarged section of the furnace. Figure 1 is a table with two furnaces, a spirit lamp and three blow pipes, with the bellows below; A A are the legs of the table; C are the bellows, and B is the side of the table; above the bellows there is a wind chest, in which the air is forced from the bellows, to keep up a steady current through the wind tubes. On the top of the bellows there are a number of coiled springs (not seen) which will allow any degree of pressure on the bellows, by the stirrup D, and the rope, E, running over the pulley, as represented; H H are the wind tubes, with very small discharge orifices; F is the large furnace, and G the smaller one; S S are two caps, and J the spirit lamp. The wind tubes can be drawn to any length, in slides, and turned in any direction. I I are the two receiving air tubes of the furnaces. They are larger than the bore of the tubes, H H, and are open at the ends, the air from the pipes H H being injected into them as represented in fig. 1, but especially in principle by fig. 2; O being the furnace pipe, P the bellows, and R the strap block to which the point of the bellows is secured. Fig. 3 shows the furnace with a crucible in it, placed upon the top of another inverted one, K. O is the air tube, very different from that in Ure's Dictionary. The cap, S, need not be used by goldsmiths, as the furnace will answer quite well without it. The arrangement of this furnace is to supply the actual amount of air required to produce the greatest amount of heat; therefore the air expands in the tube, I, and the fuel takes up the exact amount necessary without a cold current, being driven in, as in the old furnaces; for the air is rarified in the tube. I, before it enters the furnace. As experience is the best proof of utility, and is the assayer of every new invention, it is perhaps enough for us to say, that Dr. Chilton, the eminent chemist, and a great number of our principal jewellers and smelters, are using this blast furnace in preference to all others, and it is regarded by them with especial favor, working far better in practice than any other Every improvement in furnaces is valuable, and along with this one, the furnace has something more to commend it, namely, its cheapness. Messrs. Barron have taken measures to secure a patent.

Fig. 2.

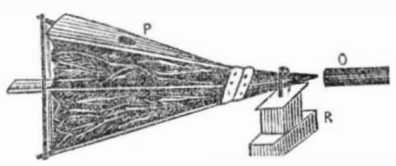
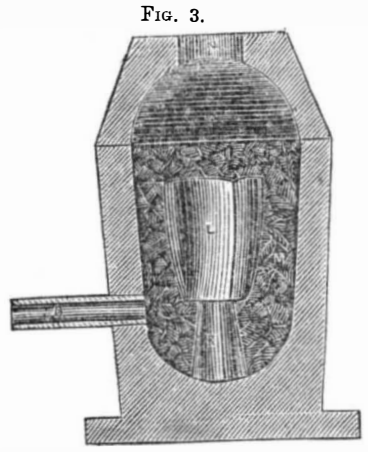


Fig. 3.



American machinery for London is in the course of construction at Trenton, to be used in the manufacture of india rubber.

Machine for Drying Cotton.

The New Orleans *Bee* says, that two gentlemen of that city have invented and are now preparing for exhibition, a new machine for drying cotton, which bids fair to improve the quality and increase the quantity of the staple. During heavy rains it will dry 250 pounds an hour and be immensely serviceable during the usual December rains, when much of the picking is injured by over-heating. A public trial of the machine will soon be made.

[There is a machine already patented for this purpose; it can dry cloth, cotton, &c., in an astonishing short period, without the aid of any artificial heat. It is both simple and cheap, too, and can be easily constructed.

Improvements in Machinery for Sawing Irregular pieces of Timber.

Mr. Oliver Wright, of Rochester, N. Y., has invented some improvements on machinery for sawing irregular shaped blocks or pieces of wood, for which he has taken measures to secure a patent, and which in our country, from its simplicity, and great amount of wood work done in it, must be of no small value. At some future time we will try and give a cut of this machine; at present, suffice it to say, that the saw is arbitrarily set at an angle with the bed block or table, which can be shifted to any position, to mitre work that may be placed on it, to be sawed to any angle or describe any curvature.

Burrell's Straw Cutter.

In our list of Patents, this week, will be found one for an improvement on a Straw Cutter, invented by Messrs. Thomas and Edward Burrell. It is a very perfect machine, and it has been in operation for some time, astonishing those who have seen it, with the ease with which it can be operated and the great quantity of work it performs in a given time.

An acquaintance of ours, some time ago, wrote us from Geneva, N. Y., saying that he had seen it in operation, and would not tell us how much work it had done in an hour, fearing that we might doubt the correctness of the statement. It uses rotary cutters and has an entirely different feed motion, from any in use, and by an endless apron, all the cut straw is received from the cutters and carried away into a proper receptacle for that purpose.

Fuel in Paris.

There are wood and coal shops in every street, and at almost every corner, where you can buy any sort of fuel you choose to order; and as it is always sold by the pound, there is no dispute or uncertainty as to the quality, and the price appears to be uniform throughout the city. The most rigid economy prevails as to the use of fuel. The French often submit to a degree of cold, which, with our habits, we should think scarcely endurable. In this respect, they show their wisdom, and have fewer colds and catarrhs, than prevail with us. They never make a fire, unless absolutely necessary. Their fuel, in the next place, is always perfectly dry, and is presented in the most convenient forms. They use much charcoal for cooking, in which there is great economy. They have none of the detestable cooking stoves of the most disagreeable kind; but they have ranges of little furnaces, where they cook entirely with charcoal, and so placed that all the odor of the food is carried off. They have every contrivance for making a fire instantly, and are never at a loss for heat, so numerous and complete are their appliances.

Cure for Headaches.

A work has recently been published in Paris, by an emminent physician, in which he describes a new remedy for headaches. He uses a mixture of ice and salt, in the proportion of 1 to 1-2, as a cold mixture, and this he applies, by means of a little purse of silk gauze, with a rim of gutta-percha, to limited spots on the forehead or other parts of the scalp where rheumatic headache is felt. It gives instantaneoous relief. The skin is subjected to the process for from half a minute to one and a half minutes, and is rendered hard and white. It is good in erysipelas and diseases of the skin.

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Scientific American

NEW YORK, SEPTEMBER 22, 1849.

Seek Useful Information.

No man who would be wise for himself, who desires to march upwards and onwards with an honorabe name for sound sense and general intelligence, can either possess the qualification spoken of, or gratify his desires, if he has not a taste for reading, and selects that kind of food for his mental appetite, which, with all his knowledge, will enable him to "get understanding." History can instruct and poetry can charm, but ignorant indeed must that man be at the present day, be he rich, or the poorest of the poor, who seeks no instruction, in scientific literature, and finds no pleasure in some kind of scientific pursuit. A knowledge of the passing events of the day —the actions of nations and men, are essential to the intelligent man; but along with this kind of knowledge, it is impossible for a man to lay claim to the possession of general intelligence, unless he reads often and attentively some periodical devoted to a diffusion of that kind of knowledge, which relates to the progress of science and art. Men of scientfic taste, are generally distinguished for uncommon strength of mind. They are shining lights, that dazzle and attract the attention of those who come within the sphere of their influence. That mechanic who possesses the greatest amount of useful knowledge, and is best acquainted with the inventions and improvements of the day, always exerts the greatest influence in his sphere and commands the highest wages. Every person knows this to be true, and it is equally true that such a person is ever found to be a great reader.

The man who reads not, is ever found to be one who believes that the moon is "no bigger than his grandsire's shield." It is quite possible for some of our working people to be far more *learned* than some of those who have a great name for extensive learning. A man may be able to pronounce *steam-engine*, in twenty different languages, but if he knows nothing about its nature, construction and operation, he is but a very ignorant man after all, in comparison with the man who possesses a full knowledge of these things. This same comparison may be well applied to every other branch of useful knowledge. A knowledge of the nature of things, is a grand object—an object which every man should continually bear in mind. But how are people to acquire this knowledge which you speak of, some will say. We will answer. It is not possible for any one man to acquire a knowledge of all the sciences, in one short life; but if every man would spend his spare moments, in reading *useful* books or papers, and would make a habit of classifying the knowledge he acquires, the growth of information and the grasp of his mind would increase with his existence; and no man who has the least experience in the world, but has felt at some time or other, the supremacy of his mind, when discoursing upon some subject with which he was well acquainted, in the company of those who were ignorant of the same: The more intelligent a man is, he feels more self respect,—he understands his own just rights better, and maintains them with a commensurate dignity.

It is the object of the Scientific American, to furnish its readers with that kind of information, which will make them better men, by strengthening their understandings, and enlarging their capacities—it deals with facts and not with fictions. In view of what we have said, we will conclude by saying, "we speak as unto wise men," *seek useful information.*

It is reported that three large steamers are nearly ready at Liverpool, to ply between Galway in Ireland and Halifax. They are expected to make the trip in six days.

If this is true, it will turn out to be a bad speculation.

A piano factory is established at Milwaukie, Wisconsin.

New Jersey Zinc Ore.—Improvement in Smelting.

In Sussex County, N. J., in the town of Monroe, there is a rich vein of the red oxide of zinc, mixed with Franklinite—which is an iron ore, combined with the oxide in small black beads. The mineral crops out at the summit of a ridge that is precipitous on either side, and about three eighths of a mile in length. The removal of a very slight covering of extraneous material lays open the ores.

The Franklinite yields iron of the finest quality, and fully equal in tenacity and fineness, to the Swedish, from which the English manufacture their best steel. It is in veins from 8 to 25 feet wide, and lies between two veins of secondary limestone, the average depth of which is reckoned by geologists about 200 feet. Taking the average of the ore, the zinc and iron are nearly equal in quantity. In some veins the zinc predominates, and in other veins the iron.

Besides these valuable productions, the white oxide of zinc is manufactured also directly from the ore, in quality superior to any ever made, and white as the whitest snow. This forms one of the best paints known, being entirely free from all poisonous qualities, and remaining for years as pure as when first put on.

In the days gone by, Lord Stirling erected a furnace there for smelting copper, but the zinc was never worked till about ten years ago, when Uncle Sam, at more expense than profit, worked the mines to obtain zinc for making the brass to be used for the national standard weights and measures. The company that now own the mines for a long time were unable to smelt the ore profitably, but they have done so at last. They constructed a great variety of furnaces before they succeeded in a form that was most advantageous. They now heat the ore to a moderate red heat, when the red oxide becomes of the consistency of paste, and the metal is passed through a sieve, and the zinc separated from the iron. The iron, even in the condition in which it is left at that stage is capable of being used, by passing through another process is rendered fit for the rolling mill.

We have seen some of the zinc; it is beautiful. It has been made into a number of articles, and it works handsomely. The iron we have not seen, but it is said to be of the very best quality. As a component part of brass alloy, zinc is a valuable metal, but above all, since the discovery of galvanism, has its true value been developed. It is an excellent covering for iron, and is used extensively in electric batteries. Its virtues are daily becoming more prominent, and its application to the arts extending in a wonderful manner, whether we look upon it in a galvanized iron house-roof, or the galvanized (zinced) wires of the electric telegraph.

Charles W. Holden.

Charles W. Holden, the well known publisher of Holden's Dollar Magazine, died on the Upper Sacramento, on the 13th of last June, of bilious dysentery. He was a very enterprising young man, a native of Barre, Mass., and we had been acquainted with him from his boyhood. He was early left an orphan, to struggle with the world on his own hand which he did with tact, talent and energy. He went to California with the highest hopes of future wealth, but alas, he has met an early grave far from his native New England mountain.

During the time of his absence, his Magazine was published here with its characteristic spirit and ability—it will still continue to be published as it has hitherto been.

Iron Cottages.

An iron cottage weighing 1500 lbs. 16 1-2 by 18 feet in two compartments—a kitchen and sitting room, with five plate glass windows, two beds, one table, one chest of drawers, two chairs, a fountain washstand, and complete apparatus for cooking can be bought in Liverpool for $150.

If one could be built in this city, for double that amount, our mechanics would soon lower the rents, by occupying their own dwellings.

False Opinions.

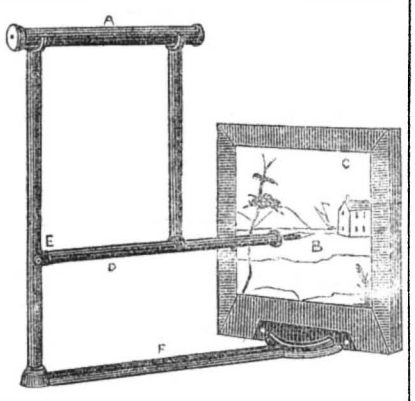
Hungary has fallen. The axiom of the Duke of Wellington, that a small army, however well disciplined, has no chance ultimately against a large one, however badly generalled, has again received a melancholy illustration.

Patriotism, bravery, prudence, and consummate military skill, have been unable to resist the ponderous pressure of the multitudinous forces of the Czar; for, against such odds, even successive victories, by multiplying necessary losses, only led to subsequent defeat.

Gorgey, like Napoleon, has yielded to the power of numbers. The tactics of Bonaparte, in resisting the onward march of the allied armies in 1814, according to Napier, exhausted all the resources of military science; but, despite the efforts of the greatest of generals, the Cossacks entered Paris.

[The above is from the Liverpool Journal. The Duke of Wellington believed in no such axiom when he fought the battle of Assaye.—The skill is not so much as the bravery, when the numbers are about equal. Napoleon learned this at Waterloo.]

Drawing made Easy.



The above fig. represents a perspective view of a delineating instrument, recently invented by Mr. Allen Judd, of Chicopee, Mass. A is a telescope through which the eye looks upon the object to be delineated; D is a tube so connected and hinged by means of centre pins that it will turn in every parallel direction with the telescope; B is a slide pencil inserted in the end of said tube. C is a drawing board standing perpendicular, on which is placed a paper to receive the delineated object; the tube, D, is so hinged at the end, E, as to permit the other end, with the pencil in it, to move every possible way on the drawing board. This instrument all combined is rather simple, and being made of polished brass tubeing all except the bare piece, F, which is iron japanned green, is a very beautiful thing. This instrument stands about 15 inches high, just the right height for convenience to sit and look through when on a common table and sitting on a common chair. The only process of operating this machine is to place it before the object to be deliniated either near by or in the distance, touch the instrument only with one or both hands, take hold of the slide pencil and the eye looking through the telescope will dictate the movement of the hand so that a correct outline in perfect proportion is readily obtained by a skilful hand. We can see no reason why this instrument cannot be advantageously introduced into our high schools where drawing is taught. The price of the instrument is $6, the inventor assures us that persons of ingenuity who have a taste for drawing, will in a short time make great proficiency in the art by its use. The inventor has applied for a patent and makes them to order at Chicopee, Massachusetts.

Fair of the American Institute.

The next Annual Fair of this Institute, opens on the 2d of next month, at Castle Garden. It is expected that a great number will be in attendance, as the President is expected from Washington, and as the City is now so healthy.

To Take Quinine.

This medicine so much used in the west, for fever, ague, is very bitter and not easily taken. The most palatable way is, to take 3 grains of it in half a cup-full of cold coffee well sweetened.

Brother Editors,—In commencing our 5th volume, we return our sincere thanks, for the good will you have always shown to us, and the many very favorable notices we have received at your hands. It is a great pleasure to an editor, to know that the paper which he conducts, is generally acceptable. Without a single exception, we are on the most friendly terms with all our contemporaries, and we are indebted to many of them for special favors. To the London Patent Journal, Messrs. Barlow and Payne, the most enterprising weekly periodical of the kind abroad, we return our grateful acknowledgements. Our friends at home are too numerous to mention by name, but we know that they will accept "the will for the deed."

Our New Dress.

Our readers will perceive, that we have not brushed up our jacket and merely blackened our boots, but we have put on a new beaver, coat, vest, pants and boots, and our nether garment is of the finest texture—the real muslin cambric, the whole of which is stitched up with our new sewing-machine. We believe that our readers will not contradict us when we say, that there is not a neater paper published on this continent.

Franklin Institute Fair.

We would call the attention of our readers to the Fair of this old Institution. It opens on the 12th of next month. It will, no donbt, be an excellent one.

Fearful Railroad Collision.

On Friday, the 7th inst., a fearful Railroad collision took place near Rochester, between a freight train going east and a passenger train going west. The passenger train was about three hours behind its time. It had been detained at Shortsville by another train which had run off the track. According to the regulations, all freight trains are obliged to *keep out of the way* of passenger trains, and if the latter has not arrived at the regular hour for the starting of the former, the freight train must wait until the passenger train arrives. These regulations were understood by the conductor and engineer of the passenger train coming west, but by direction of the superintendent of the road, the freight train went out at its regular hour, 10 o'clock, and instructions were sent down by the express train from the passenger train, coming up, to hold on, as there was a freight train coming. These instructions were not delivered.

When about a mile east of Carterville, the passenger train was met by the freight train running at the rate of 25 miles an hour. There was a high bank a piece of wood on the inner side of the curve which prevented either from discovering the other train until they were close together. The engineer on the freight train raversed his engine and fell to the ground. The engineer on the other train, not so quickly discovering his danger, had not time to reverse his engine but jumped quickly off, and the two locomotives came together with a terrible force—almost entirely destroying them. A number of the cars were badly broken—and John Sholtus was killed.

We seldom make such a long extract, in relating an accident of this kind, but this is one that requires a word of comment. It is evident, that there was mismanagement in the case, now if our railroad lines had telegraph lines completely under their control, to be used for their own business only, such an accident as the above would not occur. A new line of wires from Albany to Buffalo, could be put up at little expense, on the standing poles, and the right to use it, for the purpose stated, viz., to communicate instantly from station, to station, could surely be purchased at little expense, from some of the Telegraph Patentees.

Families which take the Scientific American have a never failing source to which they can resort for valuable receipts, and general information of the most useful kind. Young mechanics should take it, if they would consult their own interests. The sum for one years' subscription is a mere drop in the bucket, in comparison with the benefits received in return. Now is the time to become a subscriber.

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LIST OF PATENTS

ISSUED FROM THE UNITED STATES PATENT OFFICE,

For the week ending September 11, 1849.

To Abijah J. Williams, of Utica, N. Y.—For improvement in Machines for making Wire Heddles. Patented September 11, 1849.

To George Webber, of Portland, Me.—For improvement in Cam Hooks. Patented September 11, 1849.

To Stephen R. Parkhurst, of New York, N. Y. —For improvement in Cotton Gins. Patented september, 11, 1849.

To David W. Lyon, of West Troy, N. Y.—Machine for forming the Eyes of Hinges. Patented September 11, 1849.

To Samuel S. Walley, of Philadelphia, Pa., for improvement in Jointed Pawls. Patented September 11, 1849.

To Thomas & Edward Burrel, of Seneca, N. Y., for improvement in Straw Cutters. Patented September 11, 1849.

To Asa Munger & Royal C. Tallor, of Auburn N. Y., for improved Machine for Polishing Knives. Patented September 11, 1849.

To Charles, F. Tuttle, of Williamsburg, N. Y., for improvement in Registers for Hot-Air Furnaces. Patented September 11, 1849.

To Wm Wurdemann, of Washington, D. C. for improvement in Parallactic Instrument for measuring distances. Patented September 11, 1849.

To Isaac S. Hershey, of Hagerstown, Md, for improvement in machines for Breaking Hides. Patented September 11, 1849.

To William M. White, of Pittsburg, Pa. for improvement in Atmospheric Churn Dashers. Patented September 11, 1849.

To Michael Burney, of Syracuse, N. Y. for improvement in Cars for Dumping Earth, &c. Patented September 11, 1849.

To William Ward, of Zanesville, Ohio, for improvement in Horse Powers. Patented September 11, 1949.

To John B. Read, of Tuscaloosa, Ala, for improvement in Pumps for raising water. Patented September 11, 1849.

To Philip Rollhaus, of New York, N. Y. for improvement in Cooking Stoves. Patented September 11, 1849.

RE-ISSUES.

To Erastus B. Bigelow, of Clintonville, Mass, for improvement in Looms for Weaving Carpets and other figured fabrics. Patented May 1, 1842- Re-issued September 11, 1849.

To Erastus B. Bigelow, of Boston Mass., for improvement in Brussels Looms. Patented March 20, 1847. Re-issued September 11, 1849.

DESIGN.

To A. C. Barstow & Co., (Assignees of Apollos Richmond,) Providence, R. I. Design for a Portable Grate. Patented September 11, 1849.

NOTE.—In the above list of patents no less than six of the applications were made through the office of the " Scientific American"

Influence of the Animal Spirits upon the Mind.

It is hard to free our judgement from those prejudices and extreme mutations which it is subject to receive from the different cares and state of our animal spirits. Thus sometimes, when the body is vigorous and gay, it shuts out that measure of fear which is necessary to make us wise; and it suffers us not to see that sin we are guilty of, and that lies at our door.—And, on the other hand, when the spirits are dejected and low, they often let in such an excess of fear as *betrays the succors of reason*, and makes men cruciate themselves with the apprehensions of sin, even where there is really none. And hence we have sometimes seen it come to pass, that a cordal medicine has quieted a mind, and set a grieved conscience at rights.

Against the Crank.

MESSRS. EDITORS.—Much has been said and written concerning the *Crank* as used in our reciprocating steam engines, and many arguments, tables and drawings have been adduced designed to prove that the whole power of the steam applied to the piston is, through its medium faithfully transmitted to produce a rotary motion of the shaft. This is at present the universal belief. But notwithstanding all the arguments, tables and drawings which have been adduced to support this belief, and the contempt and ridicule heaped upon those who have dared to question its soundness. I must say that I am still unconvinced of its truth.

Of the arguments adduced, they appear to me but "reasoning in a circle;" and the tables and drawings, but a description of the *modus operandi* of the crank engine. For instance: when it is objected that the crank has no lever and therefore can transmit no force in the direction of rotation at the neutral or "dead power" points, they answer that at those points there is no steam expended, and therefore none wasted or lost, and that at every other part of the stroke the power of the steam is in proportion to the quantity expended: that at the commencement and termination of each stroke when the crank has but little lever, there is but a small expenditure of steam; and that when the leverage of the crank increases, the quantity (and in that the power) increases in the same proportion, and therefore the effort produced corresponds fully with the cause producing it. This, I think, is a fair statement of the argument in favor of the crank engine. Now where is the error or fallacy of this argument? In the first place, I say that it is no *argument:* it is but a simple description of the *mode of operation* of the crank engine. In the next place I say, if argument it may be called, it is a *petio principi*, a begging of the question—an *assumption* that the same quantity of steam transmitted to the shaft by any other agency would produce *no greater* effect. And in the last place, I say that, to contend that when there is no steam expended, there is no power lost, is "reasoning in a circle," and being carried into practice would never carry us out of it, or, indeed, move us out of our track. The question of *gain* or *loss* in mechanical powers resolves itself not only into the *quantity* of steam or force applied to produce a given result, but includes also the *time* within which that or a greater result can be effected. Throw out of the calculation the *time* employed to make a revolution of the shaft, or the time consumed in passing the "dead power" points, and the engine which makes a revolution once in a year, or consumes six months in passing her "centres," is just as good and economical as the best in use. Now it is assumed by the advocates of the crank engine that all the steam expended, and all the time consumed in passing the "dead" power points, must necessarily be expended to produce the same or equal result. By this logic I can prove that a man is as strong as a horse. Reject all comparison with every other mode of conveyance and you can prove that a bull can carry a load farther and quicker than a locomotive.

Because there has not hitherto been produced an engine superior to the crank, is to my mind no argument that the crank engine is the perfection of mechanical power in that line, as its admirers dogmatically pretend. From much observation and conversation with the most celebrated engineers and engine builders in this city, I boldly venture the assertion that you cannot get any three to agree in their answer to the following simple question: What is the average lever of a crank four feet long? I should like an answer through the columns of your valuable paper from yourselves, Mess. Editors, and three others; viz.: from the Novelty Works, Secor Works, and the Allaire Works. That there may be no complaint of misapprehension of my question, I will explain what I mean by "average lever." The crank as used in our steam engines is a lever, —a rigid, inflexible lever—through the agency of which a rotary motion is communicated to its shaft. Its extreme working length being four feet, what is its average length, (expressed in inches,) towards rotation, during one revolution of the shaft?

In return for the trouble given in answering this simple question, (which I consider as lying at the very bottom of the crank engine,) I promise, when answered, to give my answer to it, and to show, by comparison, that the now highly lauded crank, is a very *inefficient, bungling and wasteful contrivance.* PULLEY.

New York, Sept., 1849.

[Mr. Pulley is not content with the old scriptural plan of having a matter established by the mouth of two witnesses, he must have four. As he has "fought and conquered ere a sword was drawn," it may be difficult to find opponents to measure swords with him, especially, when he tells them that for the trouble of answering his questions, he designs to pay them back with three extinguishing thrusts from his *unconquerable blade.* Nevertheless, we will publish an answer to this, if it comes in courteous language, is brief and clear; and we will not look for an answer to his question, by the "*rules of Polemics,*" unless the person who answers chooses to do so; for the scholastic rule of debate, excludes the asking of questions by the attacking party. This is right—no General who is attacked, has any business to take up his position on ground recommended to him by his adversary. The commander who acts on the defensive takes up the position that suits himself best, while the one who takes the initiative, is bound to draw or drive him from his position, if he can.] ED.

Experiments with the Cotton Gin.

The following experiments with the cotton gin communicated by a correspondent of the Southern Cultivator, will be interesting to many of our Southern readers. The writer says :—Being much troubled by my gin not dropping the motes and trash, I closed both ends at the bottom. This, by lessening the current of air under the gin, was of some service ; but not sufficient. The brush-wheel was made in the ordinary way, by drawing the bristles double through bars about 1 1-2 inches wide, under which bars was a lining of osnaburgs. Being satisfied that the wheel created too strong a current, I cut strips of osnaburgs just wide enough to reach from one row of brushes to another, and tacked them on the *outside* of the bars ; thus destroying the fan and leaving nothing but the projection of the bristles to create a current. This was still sufficient to throw out the lint, while the motes and trash fell behind the mote board. Instead of having, as formerly, to clean out the trash and motes once a day, it now had to be done every hour. Finding the experiment succeeded, I had the brush wheel taken out and the spaces between the bars closed with thin plank ; thus converting it into a drum-wheel. The cotton which the gin now makes is worth from 1-4 to 1-2 cent. more than that made by the same gin before the alteration.

There is still an objection to the brush-wheel. The bristles, as is the usual way, are drawn in double, and as all hair is bearded in one direction, half the beards are necessarily turned down and serve to catch lint ; rendering it necessary frequently to open the gin and clean off the brushes by hand. If the brush-wheel be made of narrow strips of plank, just as wide as you wish the rows of brushes apart, and the bristles be glued to pieces of tape, or narrow strips of homespun, or to the edges of the plank itself, with the small end of the bristles turned outward, they may, on putting the wheel together, be confined in the joints, so as to hold them fast, and the beards being all turned outwards the brush will keep itself clean.

I will farther add that the breast of every gin should be closed below the seed-board ; leaving, of course, sufficient room for the seed to fall. The breast can be as easily hoisted, when necessary, by small knobs as by the under edge of the breast-board.

Worcester Mechanic's Fair.

We exhort all those who desire a treat, in viewing beautiful machinery, to visit the Worcester, (Mass.) Mechanic's Fair, this week :

Sympathies of Sound.

It is owing to the sympathetic communication of vibrations, says Herschel, that persons with clear and powerful voice, have been able to break a large tumbler glass, by singing close to its proper fundamental note. We have heard of a case where a person broke no fewer than twelve large glasses in succesion. The sympathy of vibrations, or tendency of one vibrating body to throw another into the very same state of vibration, shows itself remarkable in the case of the running of two clocks fixed to the same shelf or wall. It was known, near a century ago, that two clocks set going on the same shelf will effect each other. The pendulum of the one will stop that of the other and the pendulum of the clock which is stopped, after a certain time will resume its vibrations, and, in its turn, stop that of the other clock. Mr John Ellicot, who first observed these effects, noticed that two clocks which varied from each other ninety six seconds a day agreed, to a second, several days when they were placed on the same rail. The lowest of these two clocks, which had a slower pendulum set the other in motion in sixteen minutes and a half. These effects are clearly produced by the small vibrations communicated from one pendulum to the other, through the shelf, or rail or plank on which they both rest. It has been found that two conflicting sounds produce silence, as two converging rays of light produce darkness.

Receipt for Washing.

To one pint of soft soap add two table spoonsfuls of spirits of turpentine. If the soap is thin, it may be mixed cold, but if the soap is thick it must be warmed while stirring it together. The above quantity of soap is sufficient to do a common washing. Half a pint of the soap is to be put into as much warm water as will cover the clothes to be washed as warm as washing suds in the ordinary way of washing. Let them then stand thirty minutes, then wring them out, and put them immediately in clean, cold water—rinse well, put them then in boiling suds—to this suds add one half pint of the above compound—let them boil fifteen or twenty minutes, take them through the sudsing water and through rinsing water and whiter and cleaner clothing cannot be had. This arrangement saves completely all rubbing, which is the laborious part of the operation in washing of cloths.

[A receipt as above, we received sometime ago but did not publish before. We cannot vouch for its superiority, and we do not see what virtue there is in the turpentine. A fair trial with and without the turpentine, (every other way the same) would test its merits.

It may be superior, although why and wherefore we cannot see, but "the proof of the pudding is the eating of it."

The Orange Tree.

The Gazeta of Havana states that a young man of that city has made a discovery of a specific, which in a very short time destroys the insect which threatens to make the orange plantations of Cuba valueless as those of Florida have become. This person, who lives at No. 50 *calle del Castillo*, in the barrier of Horcon, offers to all persons who may apply to him the use of his remedy, under the following limitation : He promises to ensure a certain number of trees, from four to five hundred, without demanding any remuneration for one year, a time completely sufficient to restore the health of the fruit. The remainder of his terms are made known on application to him. This discovery will be of immense importance to Cuba, as during the last few years the vast orange groves of that island have almost become barren, and would certainly triple in value the lands of Florida, which would, but for the same pest, be now the great orange producing country of the world. Unless we are mistaken a large reward has been offered in Florida for the discovery of a practicable means of exterminating the fly.

It is said, that hemlock makes excellent hedges, if planted young in rows, and kept properly trimmed for some years.

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TO CORRESPONDENTS.

"N. R., Jr., of Vt."—We have sent you No. 31, and given you credit as desired, without, however, any recollection of the circumstance alluded to.

"D. F. S., of N. Y."—The irregularity alluded to in your letter, does not arise from any fault on our part, but must be attributed to carelessness in the Post Office Department.

"G. S., of Ct."—Ure's dictionary is embellished with cuts.

"D. A., of Mass."—Yours was received;—that to which you refer was an error, and was not noticed until too late for correction. The error was too glaring to admit of the supposition that its insertion was intentional.

"H. & L. D. B., of Pa."—It is nearly time, we should think, to hear from your case. We know of nothing that should interfere at all with your interests, or chances of success.

"S. R., Jr., of Mass."—We do not think a patent could be obtained in the instance you mention, as there is not sufficient additional novelty in the mechanical construction of the machine.

"S. A., of Mass."—You can undoubtedly obtain the necessary information from Mr. R.O. G., Reading, Ct., to whom we would advise you to direct your inquiries. We are not aware that he has established any agencies as yet. Had you been a constant reader of the Scientiffc American, during the past two years, you could not have failed to observe several descriptions of machines designed to travel by the exertion of the rudder alone, without the aid of steam or horse power. An engraving, with full description, will be found in No. 47, Vol. 3, of this paper. If, however, your machine possesses sufficient mechanical novelty in its construction,—which we could determine, only by seeing a model—we have no doubt you could obtain a patent.

"A. B. B., of N. Y."—Your model has been received, and examined: we do not discover any patentable combination, or useful improvement in it—application already having been made, for a patent for an apparatus much more simple in its construction and perfect in its operation.

"H. S., of Ct."—We cannot supply you with the Nos. you desire.

"J. A. R., of Mass."—Your letter was received, but your drawing was so imperfect we could not form an opinion of the merits of your device. Send us a model and we can then give you some definite information in regard to it. We judge it to be new, so far as we can understand it.

"C. O. R., of Mass."—You can not obtain a patent for your devise, as the same thing is in use, with the exception of a little difference in the relative position of some of its parts.

"B. E., of Pa."—It will probably cost you from $25 to $30 to get a sample of your mine analyzed in this city. There is no doubt of its being a sulphurate of emery, which is very good for polishing brass, &c.

"G. M., of N. Y."—We could not send you the Nos. you desire.

"G. M. C., of N. Y."—We have received yours, and have attentively examined your description about *the Lake*. Are you positive that there is no such lake ten mile south-east of Saratoga?

"J. S., of Ohio."—We have no knowledge of the patent for the Planing Machine having been renewed, and never heard that it was The price of the cut and advertisement would be $8.

"F. H. of Ohio."—We should think that your invention was new, but cannot advise you as to the utility of obtaining a patent.

"P. H. W. of N. Y."—We cannot express an opinion, as to the mercantile value of your invention, depending altogether as it does, upon the manner in which it is managed.

"H. W. B. of N. Y."—There have been many devices of the kind invented, but none have proved of any utility.

"J. E. A. of Boston."—We are waiting for more funds from you—please remit early.

"W. N. C. and W. W. of Ct."—Your specification and drawings are remaining here for want of funds to pay fees.

"A. D. B. of Ga."—Your specification has been forwarded to you for signatures by the favor of Mr. Griswold.

"E. J. H. of N. Y."—Cannot be supplied with No. 34, as we have no more of that No.

"W. T. C. of N. C."—We cannot do as you request, in regard to the back Nos. of vol. 4, as many of them we are out of.

"C. E. of N. Y."—There is no method in use for doing what you propose, and as to there being a large "business done in this City in that line" it has no foundation in fact.—It can undoubtedly be done, but would cost more than it would come to.

"W. S. of Vt."—We would comply with your request, were it in our power, but the Nos. you wish we have not got.

Specifications and drawings together with Patent fee of applicants with the following enitials, have been sent to the Patent Office, since our last issue.—W. S. of N. H. J. G. P. of R. I. H. A. of Ill. J. B. of Ct. R. S. T, of Mass. F. M. B. of N. J. R. S. T. of Ct. T. S. B. of N. Y. and S. T. F. of Mich.

A. J. P. of N. Y. O. W. of N. Y. Z. C. L. E. I. of Mass. and A. P. of N. Y.—Your models are in the hands of the draughtsmen and specification writers, and your business will be completed and the papers sent you for signing in a few days.

We have many more letters on hand that we designed to answer thus briefly in our Correspondence Columns this week, but space will not admit.

Money received on account of Patent Office business, since Sep. 11, 1849.

N. & Co., of N. Y. $10. Z. C. L: of Boston, $30. O. W. of N. Y. $30. A. J. P. of N. Y. $30. P. Van B. of N. Y. $30. J. G. P. of R. I. $20. M. M. B. of N. J. $20. E. B. R. of Vt. $10. T. B. of N. Y. $20.

Highly Important to Inventors.

It is not our desire to be egotistical, but we wish *all* to understand that the best Patent Agency in the United States is at the Scientific American Office—See advertisement.

The cholera was severe at some of the copper mines on Lake Superior; but it has now stopped its ravages.

There is a dog in North Attleboro, Mass., which chews tobacco like an old inveterate. It follows the example of bad teachers.

Information Wanted.

Any person concerned in boring the "Artesan Well" or that has apparatus for doing such work will find it for their interest to address Geo. Vail & Co. Moristown N. J. stating the dimention of pipe used, and such other information as they may need, before contracting.

ADVERTISEMENTS.

GENERAL AGENTS,
FOR THE SCIENTIFIC AMERICAN.

New York City,	Geo. Dexter & Bro.
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Southern,	W. H. Weld & Co.

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Norwich, Ct.	Safford & Parks.
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Mobile, Ala.	M. Boullemet.
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Rochester, N. Y.	D. M. Dewey.
Raleigh, N. C.	W. White, Jun.
Springfield, Mass.	Wm. B. Brocket.
" "	M. Bessey.
Salem, Mass.	L. Chandler.
Summit Hill,	R. H. Barnes.
Southport, Wis.	Henry M. Hugunin.
Saco, Maine,	Isaac Crooker.
Savannah Geo.	John Caruthers.
Syracuse, N. Y.	W. L. Palmer.
Taunton, Mass.	W. P. Seaver.
Utica, N. Y.	G. H. Beeseley.
Vicksburg, Miss.	J. B. Hayes.
Williamsburgh,	J. C. Gander.
Warren, Ohio,	C. J. Van Gorden.
Webster, Mass.	J. M. Shumway.

Patent Agency.

☞ From our long acquaintance and experience in Patent Office business we have no hesitancy in asserting that we are better able to judge the merits of new inventions, and are better capable of advising upon all subjects pertaining to Patents than any other concern in the United States.

Any business connected with the Patent Office may be done by letter through the Scientific American office with the same facility and certainty as though the inventor applied in person. Our prices too (another important consideration to inventors) are but about half as much as the charges of most agents, as the amount of business which we do, and that in connection with the publication of the Scientific American renders to us superior advantages over all other agents.

Having been often complimented by those who have entrusted their business in our care, we here repeat what very many have said: "The best Patent Agency in the U. States is at the Scientific American office."

All models, drawings or communications sent to the Scientific American office for inspection, are deposited from the eyes of the public until the necessary application for securing the invention has been made.

The best of artists are constantly employed to make drawings from models, and our corps of specification writers are composed of gentlemen formerly connected with the Patent Office at Washington as examiners.

All communications should be addressed to
MUNN & CO., Scientific American Office,
Post Paid. (d16) New York.

NOTICE.—We have constantly on hand and for sale:

Minifie's Mechanical Drawing Book, bound in calf,	$3,00
Cook's Condensing Engine, Plate and Book,	3,00
Leonard's Mechanical Principia,	1,50
"Scientific American," bound, 3d and 4th vols.	2,75
Scribner's Mechanics,	1,50
Ewbank's Hydraulics and Mechanics,	2,50
Morfitt's Chemical Manipulations,	2,50
Ranlett's Architecture in numbers, each	50
Arnott's Gothic Architecture " "	25
Camera Lucidas,	$6,00

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1 4t*

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51 12* WILLIAM BLAKE.

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ADEE'S AMERICAN CAST STEEL Works, (at the foot of 24th st., E. River, N. Y.) The above works are now in successful operation, and the proprietor would respectfully call the attention of machinists and all consumers of the article to an examination of his Steel, which he is warranted by the testimony of the principal machinists and edge tool makers of this city, in recommending as fully equal in every respect to any ever used in this country.

A full assortment of the different sizes constantly on hand, which the public are respectfully invited to call and examine at the office of DANIEL ADEE,
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J. STEWART is also authorized to act as agent for the sale of the celebrated Lathes manufactured by James T. Perkins of Hudson, of large size and at prices from $250 to $800. A specimen of this description may be seen at his factory as above. j27 tf

TO MANUFACTURERS OR CAPITALISTS ABOUT TO COMMENCE THE MANUFACTURE OF COTTONS.—The subscriber, brought up with Messrs. Samuel & Jno. Slater, at operating and building cotton machinery, and for the last twenty years has travelled through several of the United States, setting up and building, on the most approved plans of modern invention, now offers his services as Superintendent, and is ready to introduce a new system, greatly reducing the cost of manufacture, and at the same time making better goods than ever was in the market. Please direct, post paid, to G. W. HOWARD, 228 Eddy street, Providence, L. I. 49 2m*

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Augusta, Me., Oct. 28, 1848. o28 1y

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NOTICE.

☞ The Second Exhibition of the Maryland Institute for the Mechanic Arts, will be held at Washington Hall, in the City of Baltimore, from Thursday, 27th of September, to 18th October, inclusive. Machines, models, or goods sent to the address of H. Hazelhurst, Corresponding Secretary of the Institute, (expense paid) will be met with immediate attention, and every facility used to exhibit the same to the best advantage. j16 4m

Z. C. ROBBINS,
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Office on F street, opposite Patent Office, Washington, D. C. j20 tf

BARLOW & PAYNE, Patent Agents and Consulting Engineers, 89 Chancery Lane London
m12 tf Patent Journal Office.

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Scientific Museum.

Useful Information for All.

WOUNDS.

If a person cuts open an *artery*, put the finger on the wound and press it, then send at once for the doctor. If the wound is in the limb, tie a handkerchief twice around it above the cut, and twist it so firm that the blood cannot flow; or, fold a piece of soft rag several times, and put it quickly over the aperture, and secure it in its proper place by a piece of broad tape or rag. People should never go to sleep if they have leech bites bleeding. Bleeding sometimes occur profusely from the nose, mouth, throat, lungs, stomach, etc. Put the patient in bed, with the head raised slightly—keep the room cool, enjoy absolute quiet—give a table spoonful of vinegar in sugar and water every half hour, until a surgeon arrives. When a person receives a simple cut, though severe, it should be treated calmly. Carefully clean the wound from dirt or other matter, and dab, with sponge or rag dipped in cold water, until all bleeding stops. Then bring the edges of the new wound together and secure them with a bandage.

BRUISES AND SPRAINS.

When a person gets a bruised or sprained arm or limb, it should be kept perfectly quiet and at rest. Bruises are often attended with the rupture of small blood vessels, which bleed internally and cause discoloration. Put the patient in bed, cover the injured part with cloth dipped in cold water, or spirits and water, and change the cloth every five minutes, and afterwards make up a poultice of flaxseed meal and warm water. This is one of the best substances for treating bruises and cut bruises (for there are such wounds) that is known.

POISONOUS BITES.

Tie a bandage tightly around the limb, a little way above the point of injury, and only so tightly that it shall favor but not stop the bleeding. Wash with warm water, and place one end of a large quill over the wound and keep sucking at the other, which will produce a vacuum, and act as a cupping glass. Do this until the surgeon arrives, and you have probably saved a life.

Few people however can do this, and snake bites cannot be treated in this way. They should be treated as above directed by tieing the limb, then a piece of tobacco chewed and laid on the wound is always on hand with most people, or some strong whiskey. For poisonous bites, there have been a great number of remedies suggested; one thing should at once be done, tie the limb above the wound as fast as possible, and squeeze out the wound:

INFLAMATION.

External inflamation may be known by the presence of a pain, heat, redness, swelling, throbbing, or the formation of matter; at the commencement of these symptons, especially injuries, use cold water evaporations by means of a wet rag, for the first thirty-six hours, hot water fermentations, hot water baths and poultices are best adapted.

FAINTING.

In *fainting fits*, the face and lips turn pale, and the pulse is scarcely to be felt. Place the patient flat on his back, and if he can swallow, give brandy and water, if the coldness of the extremities continue, apply bottles filled with hot water, to the feet. For *apoplexy* keep the head well raised; remove the neck cloth; unloose the shirt and clothes; give nothing by the mouth. The above applies to *drunkeness*, but if the extremities turn cold apply warmth; as soon as he can swallow, give an emetic made by mixing a tea-spoonful of mustard in a cup of water.—*Convulsions* frequently occur in children when cutting their teeth; the different parts of the patient are drawn up in different ways. Immerse the sufferer up to the neck in a warm bath.

HYSTERICS.

The patient usually cries or laughs immoderately, the pulse is not much altered; place the head over a basin, and pour water from a jug over the head and chest till the patient becomes chilly and revives; never use any thing but cold water for the hysterical fit, unless the party turn very cold, when you should discontinue it, and apply warmth to the feet.

THE EYE.

When substances get into the eye, draw aside the eye lid and remove the substance with a piece of moistened paper; should inflammation follow it, then bathe with warm water several times a day. If lime gets into the eye, wash repeatedly with a mixture of a table spoonful of *white* vinegar to a tumbler of water.

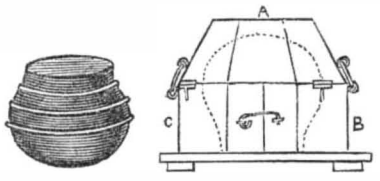
Or else cover the one eye lash inside of the other and rub the outside gently. Inflammation in the eyes of children and adults, which is very common with some, can be cured in a short time, by washing the eye with a weak solution of the sulphate of zinc. It should be dropped into the eye with a quill, it is a little painful, but is soon over.

BURNS.

Parents should be very careful of their children, no pain is so excruciating as that arising from a burn, and if it is not carefully treated, it will leave its direful mark upon the patient for life. Some have deprecated cold water in the treatment of a fire burn, but it is good. For a water burn of steam, or water, both Dally's and Mc'Connel's salves are good, but they may be fairly substituted in every family in country places especially, by melting *burdock* leaves and roots and lard together, then squeezing them through a cotton cloth. This salve should be rubbed on the scalded place at once. Olive oil dissolved in lime water makes a good salve, but we warn people against the use of much lime in any shape for wounds, especially for children—do not use it. Some barbarously chemically ignorant practitioners have taken many lives, by using lime when they should have used cold water; we exhort people to beware of the use of lime in doctoring—some *learned Dons* are totally ignorant of its real nature and effects on the human system. Cover the blisters with cotton moistened with olive oil. Do not break the blister by any means until the new skin is formed well underneath: To finish the healing of severe burns, we know of nothing better than a poultice of flaxseed meal. It is soft soothing and has great healing properties. The above simple directions upon things that sometimes effect every family, should be carefully preserved for reference.

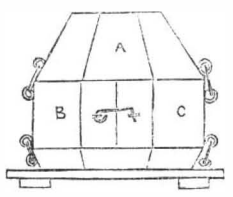
Iron Moulding.—Hollow Work.

FIG. 1.



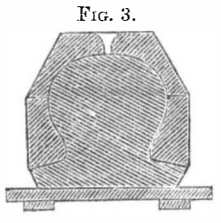
Boxes of two, three, or more parts, are sometimes employed. The sample which we select is a pot or goblet. The pattern is the exact model of the article, but is in two halves, divided vertically. The rough cast pattern is turned within and without, in a lathe, to the required thickness; and after this it is smoothed and polished and then cut in equal halves. The pattern is moulded in a box, made of four parts, as represented figures 2 and 3. A is the top; B C are the two cheeks, and D is the bottom. The pattern being moulded in an inverted position, the top, A, is made to enclose the bottom of the pot, as far up as its largest diameter; the cheeks, B C, enclose the rest of the goblet, and the bottom, D, covers up the mouth of it. The two chucks, in the first place, are laid down on a level board and linked together. The pattern is then laid down on its brim, within the chucks. The sand is then rammed round the pattern flush with the cheeks. The surface is then sprinkled with *parting sand*, and the top, A, put on, and sand is then rammed into the level of the mouth of the box. Fig. 2 shows things in this position. The whole is then inverted and the board removed and the surface of the sand round the brim of the pattern is smoothly sloped off to the edge of the box, forming the packing surface, and the bottom is then fixed on. It is then filled with sand. The core of sand filling the interior of the pattern, is pierced in several places with a pricker sent down to the pattern, to form channels for the escape of air when the metal is run in. The whole is then turned over with the bottom, D, undermost, and placed on a flat board with a hole in it to let the air escape. The sand outside the pattern is sometimes pricked.

FIG. 2.



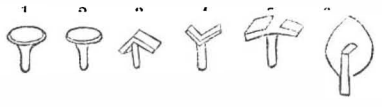
The top, A, is now lifted off; the cheeks, B C, are next separated horizontally, and the two halves of the pattern are carefully withdrawn from the core. The external and internal moulds are then slicked up with appropriate tools, and coal dust is dusted over them, and slicked up. The mouth of the gate (*git*) is then formed and smoothed. The space occupied by the pattern is now left vacant for the metal, as represented in fig. 4—a section showing the parting surfaces. All dishes are cast with their mouths downwards, and sometimes from the smallness of the mouth, compared with the largest diameter of the vessel, it is requisite to bind down the core in the mouldings, as the iron lying in so far below the core, has a tendency to lift it up, by its pressure from the base; and this would spoil the casting, if permitted to take place. The core is made fast by an iron rod in it, (not seen) but has a cross-head in the heart of the core, and is locked to a cross piece which bears on the edges of the box.

FIG. 3.



For hollow moulding, the temperature of the metal should be high, as it cools very quickly, the brim of pots being set before the mould is filled with metal. While yet hot, at a certain stage of the cooling, the casting is taken out of the sand. This is done at a particular moment known to the operative, to break off the *git* clearly, which cannot be done when too hot, and is liable to break part of the bottom when too cold. To prevent the latter accident the vessel is made thicker at the centre of the bottom. Flat gits are made for flat iron vessels, like frying pans, and they are made wide at the mouth, tapering towards the moulding, to render them easy of separation from the casting,—flat *gits* conduct the metal more freely to the different parts of the mould.

FIG. 4.



This engraving, fig. 5, represents various slickers employed in hollow mouldings. 1 2 are the concave and convex slickers, for corresponding surfaces of moulds; 3 and 4 are tools of double plane surfaces, set at angles with each other; of these there is a variety; 5 is a slicker for beads, and 6 is to smooth flat surfaces. All these have handles to them.

To Glaze Cutlery.

The glazing of cutlery articles comes after the process of grinding. It is done by emery applied to tools for the purpose. The tool on which the glazing is performed, is termed a glazer. It consists of a circular piece of wood formed of a number of pieces in such a manner that its edge or face may always present the endway of the wood. Were it made otherwise, the contraction of the parts would destroy its circular figure. It is fixed upon an iron axis similar to that of the stone.—Some glazers are covered on the face with leather, some with an alloy of lead and tin; the latter are termed caps. In others, the wooden surface above is made use of. Some of the leather-faced glazers, such as are used for forks table knives edge tools, and all the coarser polished articles, are first coated with a solution of glue, and then covered with emery. The surfaces of the others are prepared for use by first turning the face very true, then fiilling it with small notches by means of a sharp ended hammer, and lastly filling up the interstices with a compound of tallow and emery. The emery cylinder has a great speed.

After glazing, the articles are polished, all the articles to be polished are made of cast steel and have been hardened and tempered.—The polisher consists of a circular piece of wood covered with buff leather, the surface of which is covered from time to time, while in use, with the crocus of iron, called also colcothar of vitrol. The polisher requires to run at a speed much short of the stone or glazer.—Whatever may be its diameter, the surface must not move at a rate exceeding 70 or 80 feet in a second.

LITERARY NOTICES.

American Locomotives.

Parts 3 and 4, of this superb work by EMIL REUTER, Esq., are just issued from the Press. Part 3 is a continuation of the Drawings of Ross Winans' coal burning Engine in Part 2; and Part 4 illustrates a coal burning Engine, by Messrs. Norris & Brothers, of Philadelphia. Part 4 contains 3 distinct plates—plates which do honor to the artists of old Pennsylvania.—In one Plate there are no less than 8 figures. No work on Locomotives, published in any country, can equal this. No engineer should be without it, and the price per number, (75 cents,) places it within the reach of every mechanic; thus showing, that its author has not only the object in view of presenting an unrivalled work of the kind, but going a step beyond this laudable ambition by desiring to benefit the working mechanics of our country. The drawings are all to scale—accurate, and well defined. John Wiley, Agent for New York.

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